

MEMORANDUM

To: USACE Colonel Jason A. Kirk, LTC Jennifer A. Reynolds, Richard McMillen, Kim Taplin, SFWMD Governing Board, Executive Director Peter Antonacci, Terrie Bates, Susan Gray, Peter Doering, DEP Secretary Ryan Matthews

From: Periodic Scientists Conference Call Participants
 Paul Tritaik - J.N. "Ding" Darling National Wildlife Refuge (NWR) Complex
 James Evans & Holly Milbrandt - City of Sanibel
 Keith Kibbey & Lesli Haynes - Lee County
 Rae Blake – Town of Fort Myers Beach
 Connie Jarvis & Harry Phillips – City of Cape Coral
 Rae Ann Wessel & Rick Bartleson, Ph.D.-Sanibel Captiva Conservation Foundation

Subject: Caloosahatchee & Estuary Condition Report

Reporting Period: **May 23 - 30, 2017**

This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

Caloosahatchee Condition Summary: Freshwater flow into the estuary at S-79 during the past week averaged **418 cfs**. **Inadequate freshwater is causing salinity to rise and continuing the Minimum Flow & Level (MFL) exceedance for the past 64 days at Fort Myers. Salinity is at lethal levels for tapegrass in the middle and upper estuary and above the optimal range for oysters in the lower estuary.**

USACE Action: On May 26, 2017 the USACE continued flows to the Caloosahatchee with a 7-day average target of **375 cfs** measured at S-79. No discharge from the Lake Okeechobee to the St Lucie estuary at S-80.

Recommendation: We request the District use adaptive management to provide sufficient freshwater pulse flows to the Caloosahatchee to prevent further harm to the estuary. There is sufficient water in the system to provide these flows and not harm the lake and other users. **In these dry conditions flow reductions should be made to all users not singularly directed at the Caloosahatchee where lethal levels of salinity are harming tape grass. We request weekly calls resume.**

Lake Okeechobee Level: **11.02 ft. (Beneficial Use Sub-Band)** Last week: **11.12 ft**

Lake Okeechobee Inflow: **121 cfs** Lake Okeechobee Outflow: **920 cfs**

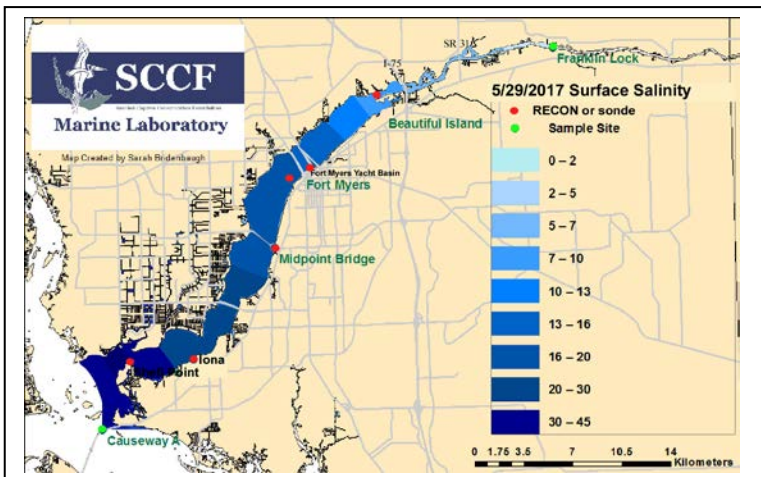
Weekly Rainfall: WP Franklin **0.81"** Ortona **0.58"** Moore Haven **0.89"**

Salinity Beautiful Island: **7.0 -13 psu** (SCCF RECON Marker 18) Previous wk **4.9 -9.3 psu**

Salinity Fort Myers: **13 – 16 psu** (SCCF Yacht Basin) Previous wk **12 – 17 psu**

MFL Status: **MFL Exceedance; 30-day moving average ≥ 10 psu: 64 days since 3/28/17**

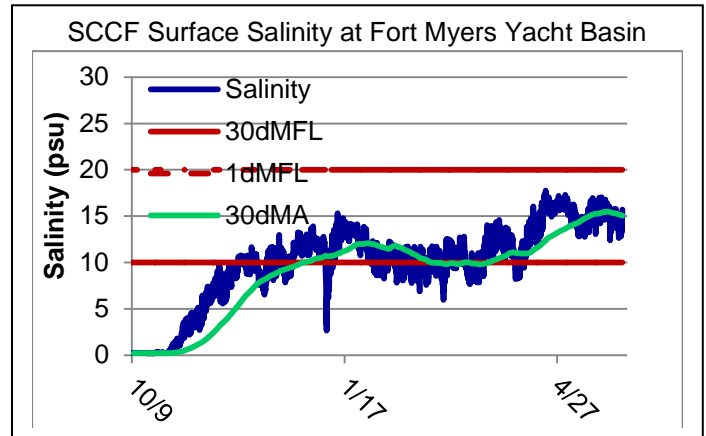
Salinity Shell Point: **28 – 36 psu** (SCCF RECON) Previous wk **29 – 36 psu**



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	7.0 -12	< 5 psu	High
Fort Myers	13 – 16	<10 psu	MFL Exceed
Shell Point	28 – 36	25 - 32 psu	-
Light (25% I _z depth meters)			
Beautiful Is	1.12	1 meter	In Range
Fort Myers	1.28	1 meter	In Range
E Sanibel	2.30	2.2 meters	In Range

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **418 cfs**. Over the past 14 days **26%** of Lake Okeechobee outflow was directed to the Caloosahatchee at S-77, **73%** was delivered south to the EAA, 1% was directed to S-308, and the L8 **back flowed into the Lake**.

ACOE May 9 Releases at S79				
Date	Pulse Target	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
5/23/2017	300	243	337	472
5/24/2017	0	377	99	-5
5/25/2017	0	0	0	268
5/26/2017	450	414	145	-20
5/27/2017	975	876	NR	52
5/28/2017	600	658	514	152
5/29/2017	300	360	393	224
7 day Avg	375	418	NR	163



Upstream of S-79/Franklin Conditions: On 5/30/17 the Olga Water Treatment plant chlorides measured **93 mg/L**, apparent color was **84 CU** and turbidity measured **2.2 NTU**. **Significant algae** were noted at the plant intake the past 3 days. The plant is online at 2000 GPM.

Upper Estuary Conditions: The average salinity at Fort Myers, **14 psu**, is in the harmful range for tape grass.

Lower Estuary Condition: The average salinity at Shell Point, **32 psu**, was in the optimal range for seagrass but above the optimal range for oysters.

J.N. "Ding" Darling NWR:

Monitor Site	Salinity (psu)	Diss O ₂ (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	35.9 – 36.7	2.8- 9.2	4.6 – 16.7	1.9 – 6.2
Tarpon Bay	35.5 – 36.2	3.4 – 6.4	5.0– 10.9	3.0 – 6.4

Red Tide: Recent samples collected alongshore southwest Florida from Pinellas to Collier counties indicate *Karenia brevis* is still present in "background" to "very low" concentrations (FWRI, SCHD, MML, CCPCD; 5/20-5/23). *Karenia brevis* was not present in samples collected in Charlotte Harbor and coastal Lee County. Detailed sample information and a summary of impacts can be obtained through FWC Fish and Wildlife Research Institute at:

<http://myfwc.com/redtidestatus>.

Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% lo depth (meters)
Target Values	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Beautiful Is	6.1	117	2.2	1.12
Fort Myers	3.0	103	1.1	1.28
E Sanibel	4.2	10.9	3.5	2.26

Target light penetration: **CE**- Caloosahatchee Estuary =1 m
SCB-San Carlos Bay = 2.2 meters
 Definition of 25% I_z: **z** where **I** is 25% of surface **I**.
 I = irradiance, z= depth